



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

POSITIVE RECALL

EFFECTIVE 18-02-02 AUTH 5AD
RELEASED 9 9-89 DATE 19-02-01

D5425-043

Job Sheet 170127



inspected to reflect changes as per ECU18-036. to rev B

Part No: D5425-043

Job Qty: 1 ea

Part Name: Float Skidtube Assembly



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/10/18

Job Tracking No:

Due Date: 1/19/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: IPP REV:A 17.11.02 NEW ISSUE DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		1/16/18	0.00	0.00	Start Up Skid tubes-2		
110	Skid tubes	1 pcs		1/17/18	0.00	8.24	Skid tubes-3		AP 2018-01-11
120	CNC Vertical Machining	1 pcs		1/18/18	0.00	22.77	HAAS1-4		KT 18-01-14
130	QC	1 pcs		1/18/18	0.00	0.00	QC2 Machining-4		KT 18-01-19
140	QC	1 pcs		1/18/18	0.00	0.00	QC8 Machining-4		18/01/22
150	HandFinish	1 pcs		1/18/18	0.00	0.24	HandFinish1		2018/01/23
160	QC	1 pcs		1/18/18	0.00	0.00	QC7-5		Mac
170	CNC Bend Skid tubes	1 pcs		1/18/18	0.00	2.63	CNC Bend Skid tube		Mac
180	QC	1 pcs		1/18/18	0.00	0.00	QC5		BE
190	Skid tubes	1 pcs		1/18/18	0.00	8.24	Skid tubes-3		ME-DAS
200	QC	1 pcs		1/18/18	0.00	0.00	QC5		38
210	HandFinish	1 pcs		1/18/18	0.00	0.24	HandFinish6		DR 19/01/30
220	QC	1 pcs		1/18/18	0.00	0.00	QC7-5		Mac
230	Skid tubes	1 pcs		1/18/18	0.00	8.24	Skid tubes-3		Mac #1 TF
240	QC	1 pcs		1/18/18	0.00	0.00	QC5		PD 19-02-01
250	HandFinish	1 pcs		1/18/18	0.00	0.24	HandFinish6		38
260	QC	1 pcs		1/18/18	0.00	0.00	QC7-5		38
270	SprayPaint	1 pcs		1/18/18	0.00	0.00	Spray Paint		FEB 05 2019
280	QC	1 pcs		1/18/18	0.00	0.00	QC14		FEB 20 2019
290	HandFinish	1 pcs		1/19/18	0.00	0.24	HandFinish4		01/19-2-38
300	QC	1 pcs		1/19/18	0.00	0.00	QC5		FEB 20 2019
310	Packaging	1 pcs		1/19/18	0.00	0.00	Packaging3-2		FEB 21 2019
320	QC21-SA	1 Ea		1/19/18	0.00	0.00	QC21		FEB 21 2019

Part Op 110 - 1-Cut tube to finished length as per Dwg. 2-Deburr ends as per Dwg.

Descriptions: 120 - 1-Machine as per Dwg. and Folio FB536 DWG REV: 18 FOLIO REV: 18 2-Deburr as per Dwg.

150 - 1-Scrub inside of tube with medium scotchbright.

170 - 1-Bend Aft end of tube as per Dwg. and Folio 4.375. Insert Bending mandrel DT 10328 at 4.375 from aft end. Use buggy A,B,C AND DT 4.375 A & B. to stabilize tube. HEIGHT 4.375 2-Bend Forward end of tube as per Dwg. and Folio 7.310. Insert Bending mandrel DT 10328 at 7.310 from fwd end. Use buggy A,B,C AND DT 7.310 A & B. To stabilize tube. HEIGHT 7.310 3-Record dimensions on work order.

180 - #NAME?

190 - 1-Drill remaining holes of section I-I using DT 4.375 2-Drill remaining holes of section J-J using DT 4.375

3-Open holes to finished size as per Dwg. 4-Deburr holes per QSI002 section 4.2.3 and blow out all chips from inside of tube.

230 - 1-Wet install crossbolt spacers of Section G-G. Swage to 0.437 as per Dwg. PRIMER B 5108160 Start

182: outsource P0042488 CC 19-02-01

Plex 1/10/18 1:33 PM Dart.lajeunesse.marie

P.T.O.

DART
AEROSPACE
S031487

Dart Aerospace Ltd.

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Hawkesbury, ON K64 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com



Float Skidtube Assembly

PART NO: D5425 - 043

Revision:

Operation: Start up Operation

Change No:

Mfg Date: 01/11/18

Job No: 170127



0119

REMOVED 308 DATE 11/11/18
RECYCLE 042 WITH
RECYCLE 042

Time: _____ Finish Time: _____ ***CURE TIME _____ HRS. BEFORE PROCEEDING TO NEXT STEP***
 2-Swage crossbolt spacers of Section F-F to 0.313 as per Dwg. 3-Trim / Grind flush, deburr. 4-Identify per QSI 044 6.1
250 - *DO NOT SUBMERGE TUBE IN DEOXIDIZER*****
270 - *PLUG ALL CROSSBOLT SPACER HOLES PRIOR TO PRIME AND PAINT***** 1-PRIME AS PER DWG AND
 QSI005 4.2.1.3.3 PRIMER BATCH: _____ 2-PAINT AS PER DWG AND QSI005 4.2.2.4 PAINT
 BATCH: _____
290 - 1-Install FWD and AFT cap seal with sikaflex-241 / 291 B _____ Exp: _____ Start time: _____
 Finish time: _____ 2-Coat all exposed hardware with LPS Procyon. Remove any excess off with MEK degreaser.
 A/R LPS Procyon B _____

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	D6028-195 <i>B154501-72</i>	1	20	0	0
230-Skidtubes	D5512-1 <i>S146869</i>	12	66	0	0
	D5518-1 <i>5031301</i>	18	78	0	0
290-HandFinish	AN3C5A <i>5075099</i>	6	1,462	0	0
	D3672-1 <i>F164809</i>	6	1,133	0	0
	D5483-041 <i>S150717</i>	1	0	0	0
	D5484-041 <i>S151947</i>	1	0	0	0
	NAS1149C0332R <i>S 40515</i>	6	4,369	0	0

Part Specifications

Specifications could not be found.

068232

Plex 1/10/18 1:33 PM Dart.lajeunesse.marie

DQA: _____ Date: _____

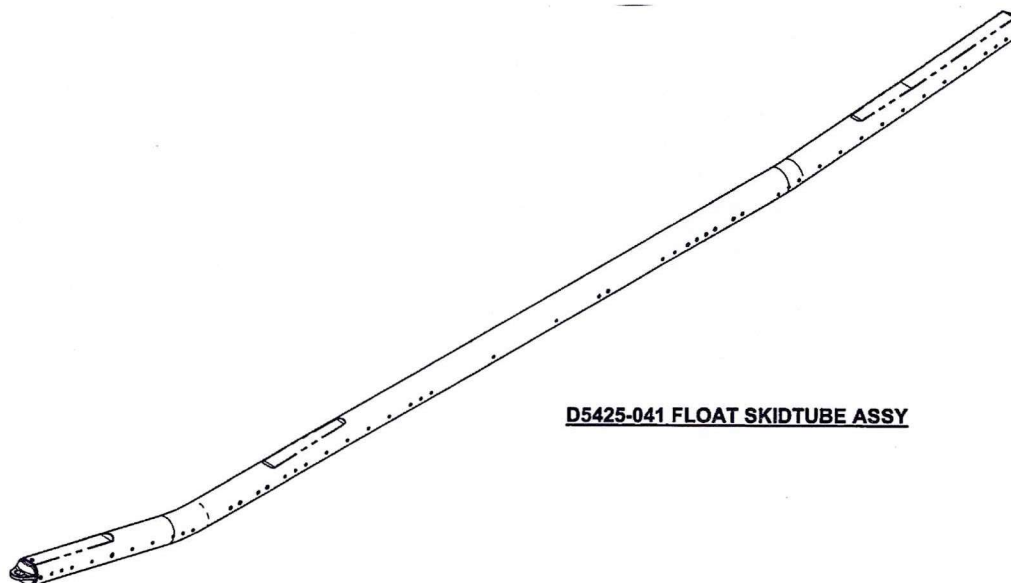
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>170127</u> Part No. <u>D5425-043</u> NCR No. _____	DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☒ Quality ☐ Other ☐																																																																																																																																		
Date: <u>18/01/10</u>	Step #: <u>190</u>	QTY Effective: <u>1</u>	MRB (OSI042) Approval 12 9-89																																																																																																																																	
Description Work Order Deviation - current hole diameters can cause crossbolt spacers to bend in off CL holes		Disposition - ream off CL holes to 0.383 ^{+0.000} _{-0.002} as shown in attached amended drawing (Detail N and P) - final hole size within original tolerance, no deviation required for QC																																																																																																																																		
		Completed By 19-07-22																																																																																																																																		
		Lead hand / Supervisor Approval Verification 19-07-22																																																																																																																																		
		QC / QA Coordinator Approval 68 9-89																																																																																																																																		
Root Cause <table border="0" style="width:100%;"> <tr><td>Environment</td><td>☐</td><td>No Re-verification</td><td>☐</td></tr> <tr><td>Design</td><td>☐</td><td>Operator</td><td>☐</td></tr> <tr><td>Doc/Data</td><td>☐</td><td>Offset/Setup</td><td>☐</td></tr> <tr><td>Equip/Tooling</td><td>☐</td><td>Supplier</td><td>☐</td></tr> <tr><td>Handling/Pre</td><td>☐</td><td>Training</td><td>☐</td></tr> <tr><td>Material</td><td>☐</td><td>Use for Testing</td><td>☐</td></tr> <tr><td>Internal Transport</td><td>☐</td><td>Poor Information</td><td>☐</td></tr> <tr><td>Tribal Knowledge</td><td>☐</td><td>Rushing</td><td>☐</td></tr> <tr><td>LOA</td><td>☒</td><td>Product Improvement</td><td>☐</td></tr> <tr><td>Substation</td><td>☐</td><td>Process Improvement</td><td>☐</td></tr> <tr><td>Past Expiry Date</td><td>☐</td><td>Manufacturing Process</td><td>☐</td></tr> <tr><td>Misidentified</td><td>☐</td><td>Past Due</td><td>☐</td></tr> </table> FAULT CATEGORY <table border="0" style="width:100%;"> <tr><td>Pressure/Forced</td><td>☐</td><td>Temperature/Cure</td><td>☐</td><td>Power Loss/Surge</td><td>☐</td><td>Positioned Wrong</td><td>☐</td></tr> <tr><td>Bending</td><td>☐</td><td>Set-up</td><td>☐</td><td>Folio/Program</td><td>☐</td><td>Outside Dimensions</td><td>☐</td></tr> <tr><td>Centre Not Concentric</td><td>☐</td><td>BOM/Route</td><td>☐</td><td>Grain</td><td>☐</td><td>Over/Under tolerance</td><td>☐</td></tr> <tr><td>Cracks</td><td>☐</td><td>Broken/Damage/Defect</td><td>☐</td><td>Weld</td><td>☐</td><td>Part Incorrect</td><td>☐</td></tr> <tr><td>Crimp/Kink/Ripple/Wave</td><td>☐</td><td>Inspection Incomplete/Unqualified</td><td>☐</td><td>Wrong Stock Pulled</td><td>☐</td><td>Part Lost/Missing</td><td>☐</td></tr> <tr><td>Cuffs</td><td>☐</td><td>Contamination</td><td>☐</td><td>Out of Sequence</td><td>☐</td><td>Part Moved</td><td>☐</td></tr> <tr><td>Crushing</td><td>☐</td><td>Countersink</td><td>☐</td><td>Off-set</td><td>☐</td><td>Drawing</td><td>☐</td></tr> <tr><td>Heat Treat</td><td>☐</td><td>Cut Too Short</td><td>☐</td><td>Mislabeled</td><td>☐</td><td>Finish</td><td>☐</td></tr> <tr><td>Wave/Twist in Tube</td><td>☐</td><td>Instructions Incomplete/Unclear</td><td>☐</td><td>Fit/Function</td><td>☐</td><td>Misread</td><td>☐</td></tr> <tr><td>Marks/Chatter</td><td>☐</td><td>Drill Holes ☒</td><td>☐</td><td>Misaligned/off center</td><td>☐</td><td>Turning Sequence</td><td>☐</td></tr> </table>					Environment	☐	No Re-verification	☐	Design	☐	Operator	☐	Doc/Data	☐	Offset/Setup	☐	Equip/Tooling	☐	Supplier	☐	Handling/Pre	☐	Training	☐	Material	☐	Use for Testing	☐	Internal Transport	☐	Poor Information	☐	Tribal Knowledge	☐	Rushing	☐	LOA	☒	Product Improvement	☐	Substation	☐	Process Improvement	☐	Past Expiry Date	☐	Manufacturing Process	☐	Misidentified	☐	Past Due	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐	Marks/Chatter	☐	Drill Holes ☒	☐	Misaligned/off center	☐	Turning Sequence	☐
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OTHER : _____																																																																																																																																				

QTY -041	P/N	DESCRIPTION
X	D5425-041	FLOAT SKIDTUBE ASSY
6	D3672-1	WASHER
1	D5425-1	FLOAT SKIDTUBE
1	D5483-041	TOW CAP ASSY
1	D5484-041	AFT CAP ASSY
12	D5512-1	CROSSBOLT SPACER
37	D5518-1	CROSSBOLT SPACER
6	AN3C5A	BOLT
6	NAS1148C0332R	WASHER



D5425-041 FLOAT SKIDTUBE ASSY

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 170127

1801-10

UNDER REVIEW N.D.

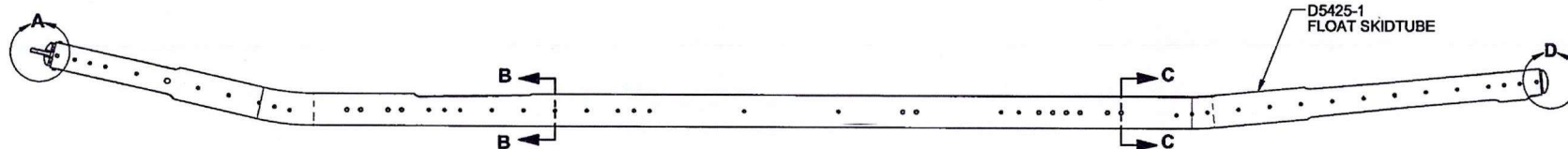
URF17-729 NO

RELEASED
2017-10-31
ECN17-72B

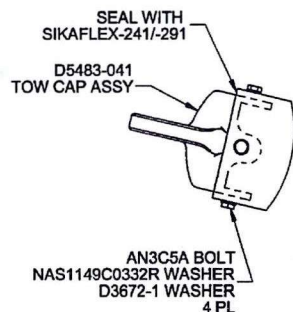
APPROVED

A	NEW ISSUE	NO	17.07.19
REV.	DESCRIPTION	BY	DATE
DESIGN	NO	DART AEROSPACE USA, INC. EUGENE, OR	
DRAWN	NO		
CHECKED	AJS	DRAWING NO.	REV. A
MFG. APPR.	DP	D5425	SHEET 1 OF 10
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	412 FLOAT SKIDTUBE	NTS
DATE	17.07.19	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

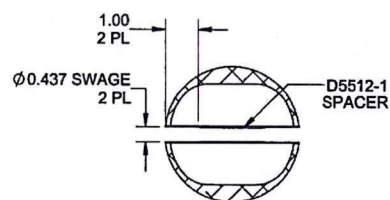
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D5425-041 FLOAT SKIDTUBE ASSY

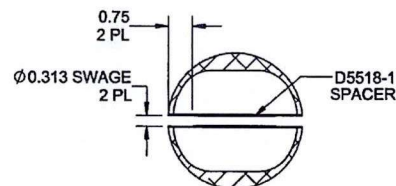


DETAIL A
SCALE 4X



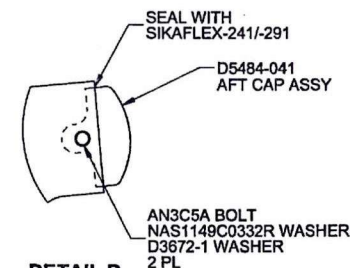
AFTER DRILLING AND BENDING, PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. WET INSTALL D5512-1 SPACER PER QSI 002
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION C-C
SCALE 4X
12 PL



AFTER DRILLING AND BENDING, PERFORM THE FOLLOWING FOR Ø0.377 HOLES ONLY:
1. INSERT D5518-1 SPACER
2. SWAGE TO Ø0.313 X 0.75 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION B-B
SCALE 4X
37 PL



DETAIL D
SCALE 4X

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME PER DART QSI 005 4.2.1.3.3
PAINT PER DART QSI 005 4.2.2.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 54.5lbs
- 8) COAT ALL EXPOSED FASTENERS WITH LPS "LPS PROCYON"

UNDER REVIEW

URF17-729 NO

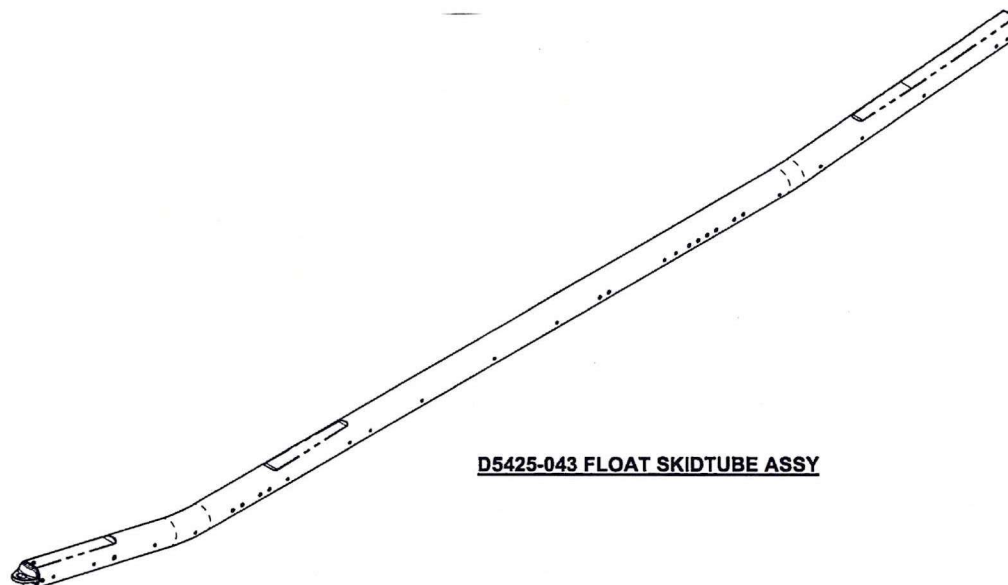
RELEASED
2017-10-31

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DART AEROSPACE USA, INC.		
DESIGN	NO	EUGENE, OR
DRAWN	NO	
CHECKED	AJS	DRAWING NO. D5425
MFG. APPR.	DP	REV. A
APPROVED	WM	SHEET 2 OF 10
DE APPR.	DSC	SCALE
DATE	17.07.19	NTS
TITLE 412 FLOAT SKIDTUBE		

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QTY -043	P/N	DESCRIPTION
X	D5425-043	FLOAT SKIDTUBE ASSY
6	D3672-1	WASHER
1	D5425-3	FLOAT SKIDTUBE (DART TRIBAG)
1	D5483-041	TOW CAP ASSY
1	D5484-041	AFT CAP ASSY
12	D5512-1	CROSSBOLT SPACER
18	D5518-1	CROSSBOLT SPACER
6	AN3C5A	BOLT
6	NAS1149C0332R	WASHER



D5425-043 FLOAT SKIDTUBE ASSY

UNDER REVIEW

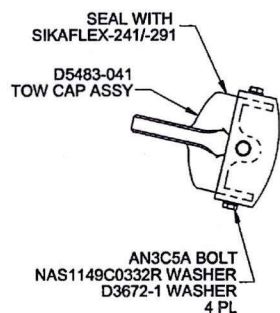
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RELEASED
2017-10-31

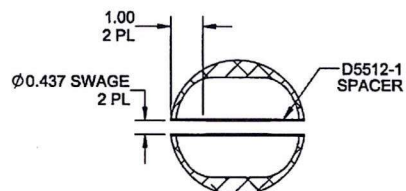
APPROVED

DESIGN	NO	DART AEROSPACE USA, INC.	
DRAWN	NO	EUGENE, OR	
CHECKED	AJS	DRAWING NO.	REV. A
MFG. APPR.	DP	D5425	SHEET 3 OF 10
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	412 FLOAT SKIDTUBE	NTS
DATE	17.07.19	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

D5425-043 FLOAT SKIDTUBE ASSY

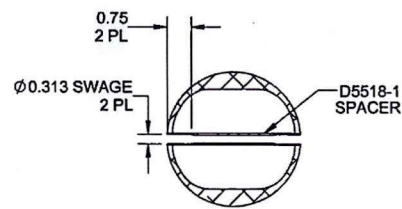


DETAIL E
SCALE 4X



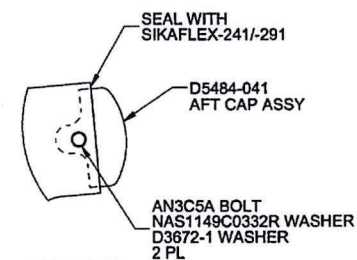
AFTER DRILLING AND BENDING, PERFORM THE FOLLOWING FOR Ø 0.508 HOLES ONLY:
1. WET INSTALL D5512-1 SPACER PER QSI 002
2. SWAGE TO Ø 0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION G-G
SCALE 4X
12 PL



AFTER DRILLING AND BENDING, PERFORM THE FOLLOWING FOR Ø 0.377 HOLES ONLY:
1. INSERT D5518-1 SPACER
2. SWAGE TO Ø 0.313 X 0.75 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION F-F
SCALE 4X
18 PL



DETAIL H
SCALE 4X

- NOTES:**
1) MATERIAL: N/A
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME PER DART QSI 005 4.2.1.3.3
PAINT PER DART QSI 005 4.2.2.4
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
7) WEIGHT: 54.3lbs
8) COAT ALL EXPOSED FASTENERS WITH LPS "LPS PROCYON"

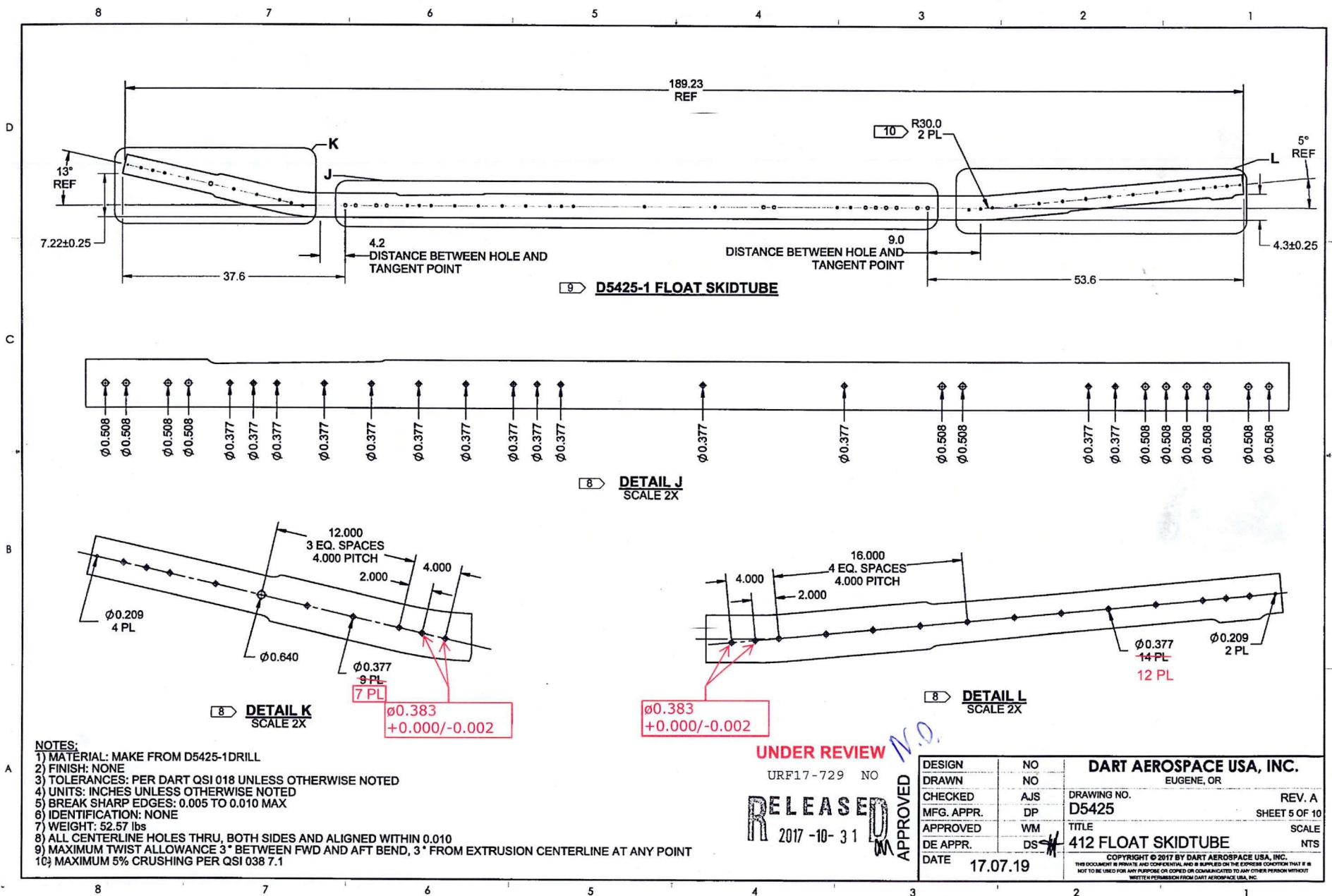
UNDER REVIEW

URF17-729 NO

RELEASED
2017-10-31

APPROVED

DESIGN	NO	DART AEROSPACE USA, INC.	
DRAWN	NO	EUGENE, OR	
CHECKED	AJS	DRAWING NO.	REV. A
MFG. APPR.	DP	D5425	SHEET 4 OF 10
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	412 FLOAT SKIDTUBE	NTS
DATE	17.07.19	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



UNDER REVIEW

URF17-729 NO

RELEASED
2017-10-31

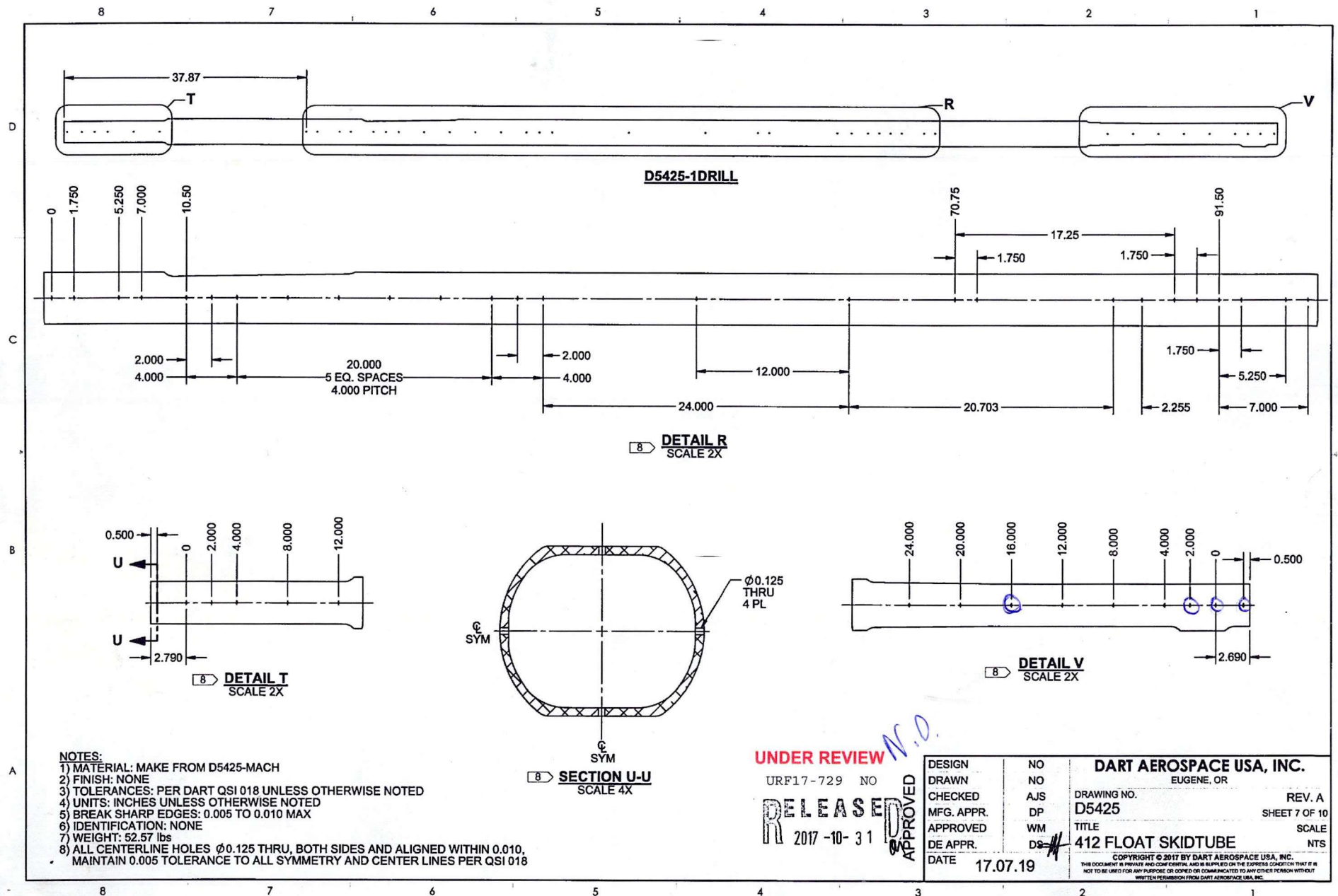
APPROVED

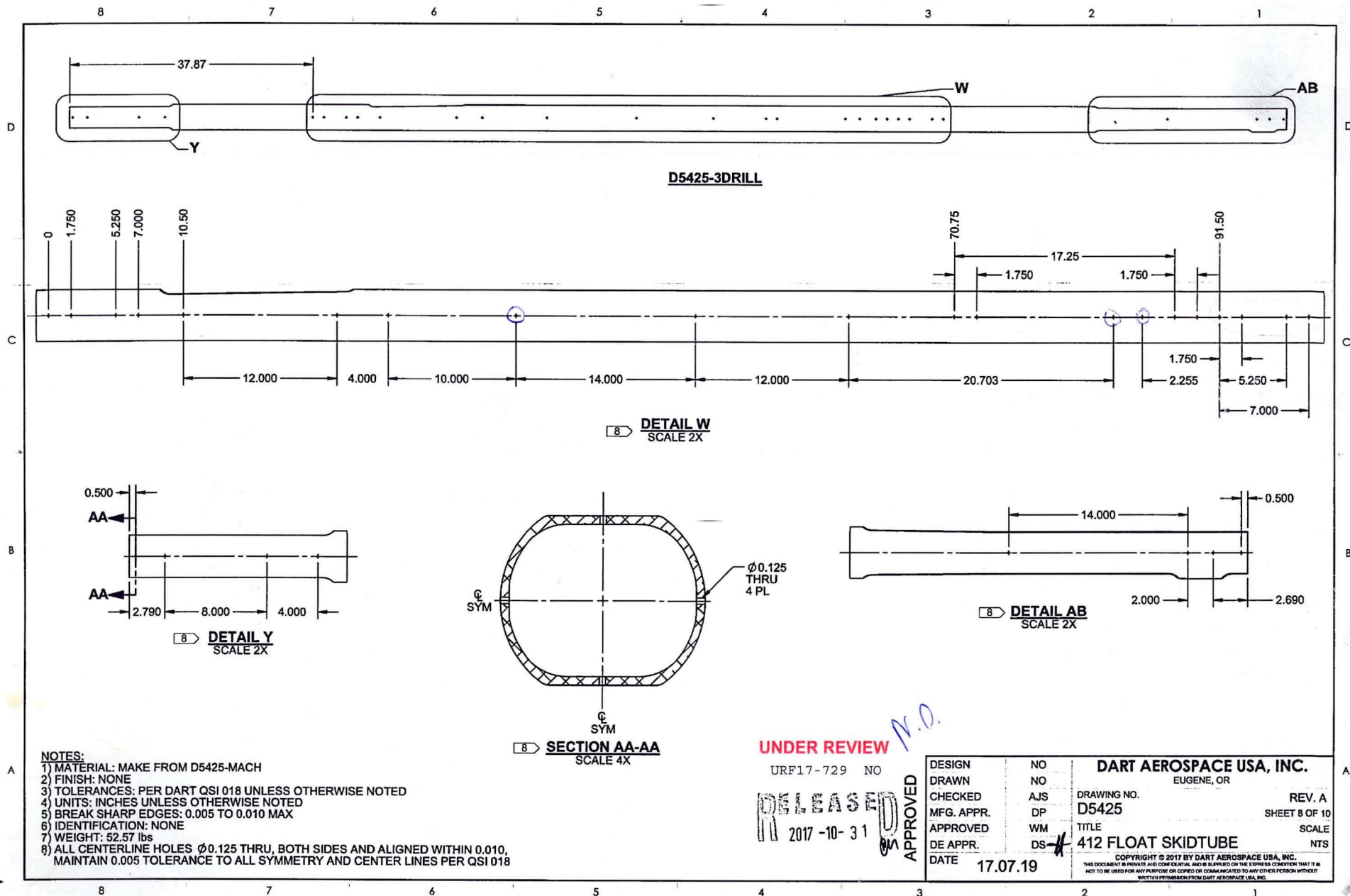
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DRAWN	NO
CHECKED	AJS
MFG. APPR.	DP
APPROVED	WM
DE APPR.	DS
DATE	17.07.19

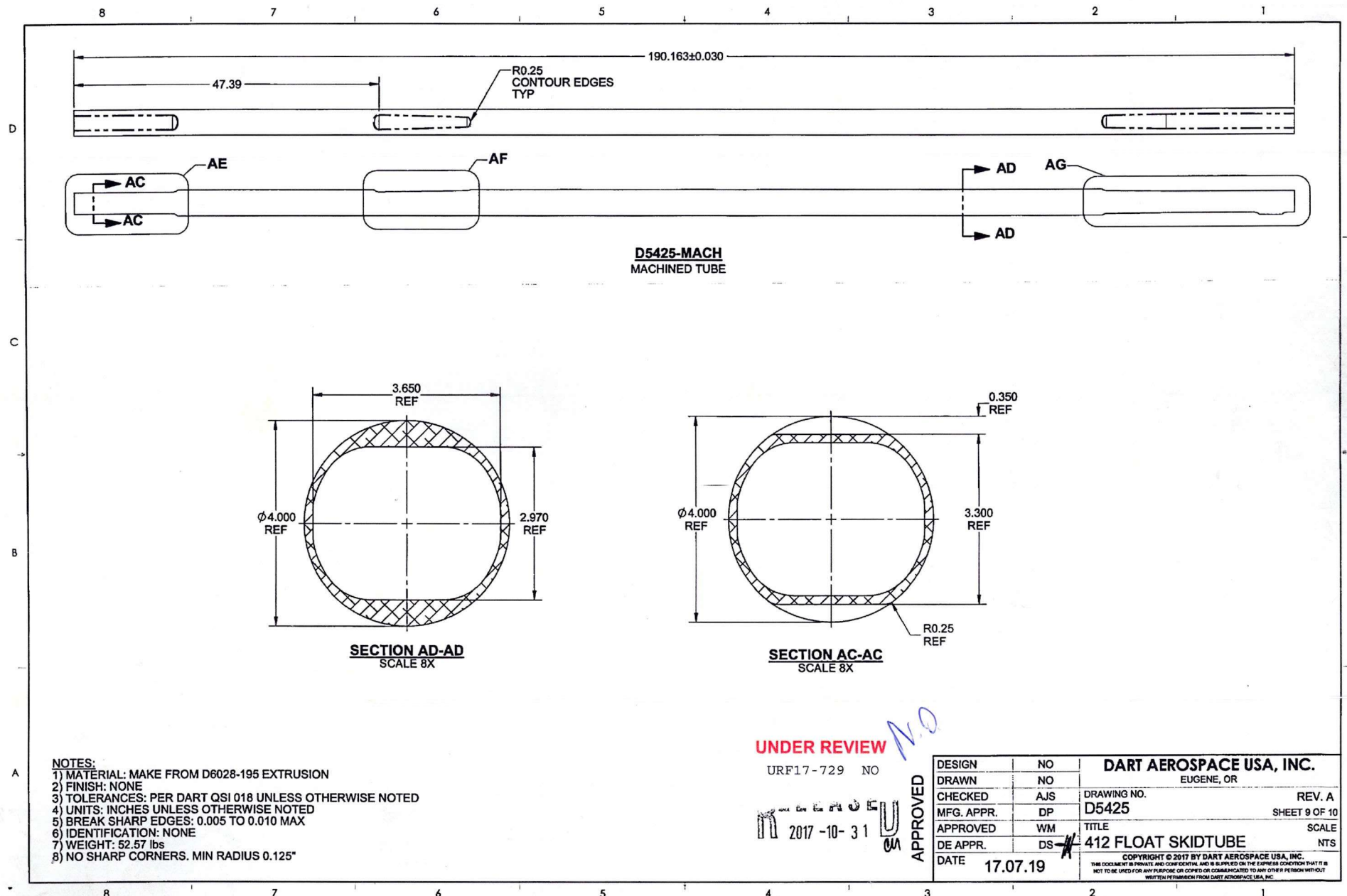
DART AEROSPACE USA, INC.
EUGENE, OR

DRAWING NO. D5425	REV. A
TITLE 412 FLOAT SKIDTUBE	SCALE NTS

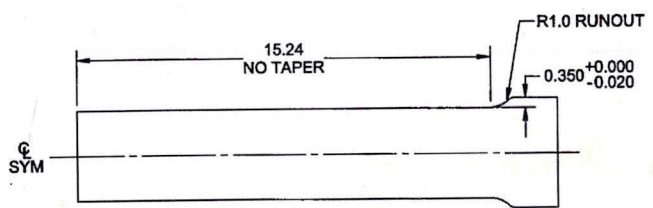
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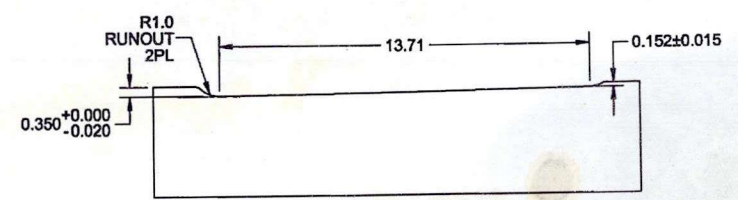




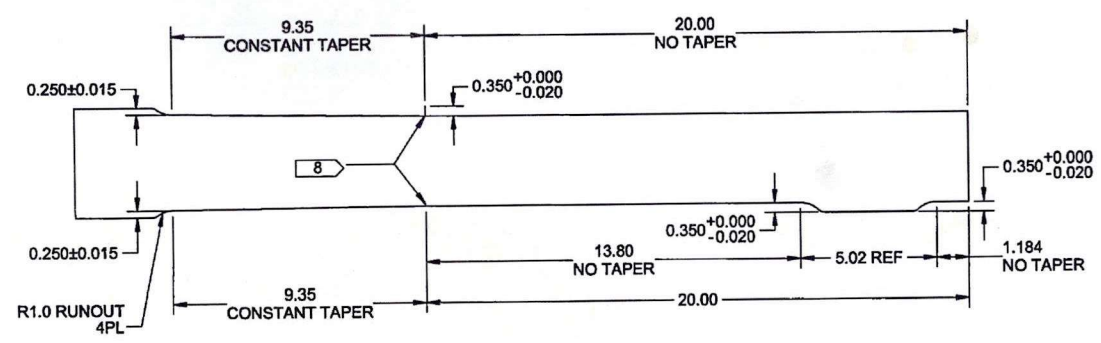
8 7 6 5 4 3 2 1



DETAIL AE
SCALE 3X



DETAIL AF
SCALE 3X



DETAIL AG
SCALE 3X

UNDER REVIEW

URF17-729 NO

RELEASED
2017-10-31

APPROVED

DESIGN	NO	DART AEROSPACE USA, INC.	
DRAWN	NO	EUGENE, OR	
CHECKED	AJS	DRAWING NO. D5425	REV. A
MFG. APPR.	DP	SHEET 10 OF 10	
APPROVED	WM	TITLE	
DE APPR.	DS	412 FLOAT SKIDTUBE	
DATE	17.07.19	SCALE NTS	

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8 7 6 5 4 3 2 1

DART AEROSPACE LTD		Work Order:
Description: FLOAT SKID TUBE		Part Number: D5425-043
Inspection Dwg:	Rev: A	Page 1 of 1

INSPECTION SHEET

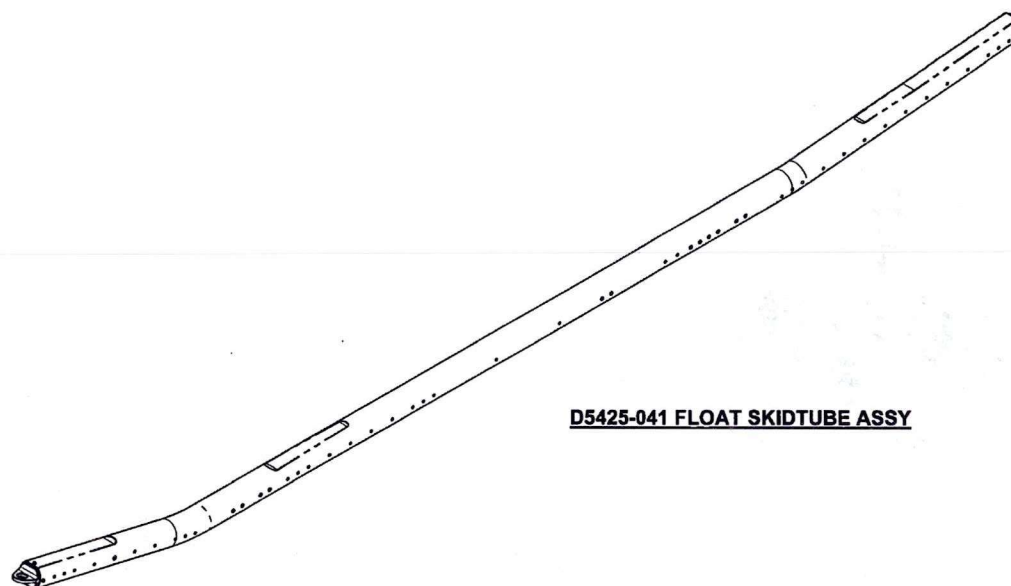
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
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2.790	±0.010	2.790	✓		" "	" "
10.790	±0.010	10.790	✓		CNC-02	vern
14.790	±0.010	14.790	✓		TAPE	—
43.116	±0.010	43.116	✓		↓	↓
44.866	±0.010	44.866	✓			
48.366	±0.010	48.366	✓			
60.366	±0.010	60.366	✓			
64.366	±0.010	64.366	✓			
74.366	±0.010	74.366	✓			
121.069	±0.010	121.069	✓			
123.324	±0.010	123.324	✓			
125.866	±0.010	125.866	✓			
127.616	±0.010	127.616	✓			
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0.500	±0.010	0.500	✓		Kt-05	vern
2.640	±0.010	2.640	✓		" "	" "
4.640	±0.010	4.640	✓		" "	" "
18.640	±0.010	18.640	✓		TAPE	—
15.24	±0.030	15.24	✓		" "	" "
R1.0	±0.100	1.0	✓		R-G	—
0.350	±0.005	0.348	✓		machine	—
0.350	±0.005	0.349	✓		" "	" "
R1.0	±0.100	R1.0	✓		R-G	—
13.71	±0.030	13.740	✓		TAPE	—
0.152	±0.015	0.152	✓		machine	—
0.250	±0.015	0.250	✓		" "	" "
9.35	±0.030	9.35	✓		TAPE	—
0.350	±0.005	0.348	✓		machine	—

Measured by: 9-89 Kt	Checked by: [Signature]	QC Inspector:
Date: 18-01-19	Date: 18/01/22	Date:

Engineering Approval: (If necessary)	Date:
--	--------------

Rev	Date	Change	Revised by	Approved
B	14.07.31	New Issue	KJ	

QTY -041	P/N	DESCRIPTION
X	D5425-041	FLOAT SKIDTUBE ASSY
6	D3672-1	WASHER
1	D5425-1	FLOAT SKIDTUBE
1	D5483-041	TOW CAP ASSY
1	D5484-041	AFT CAP ASSY
12	D5512-1	CROSSBOLT SPACER
37	D5518-1	CROSSBOLT SPACER
6	AN3CSA	BOLT
6	NAS1149C0332R	WASHER



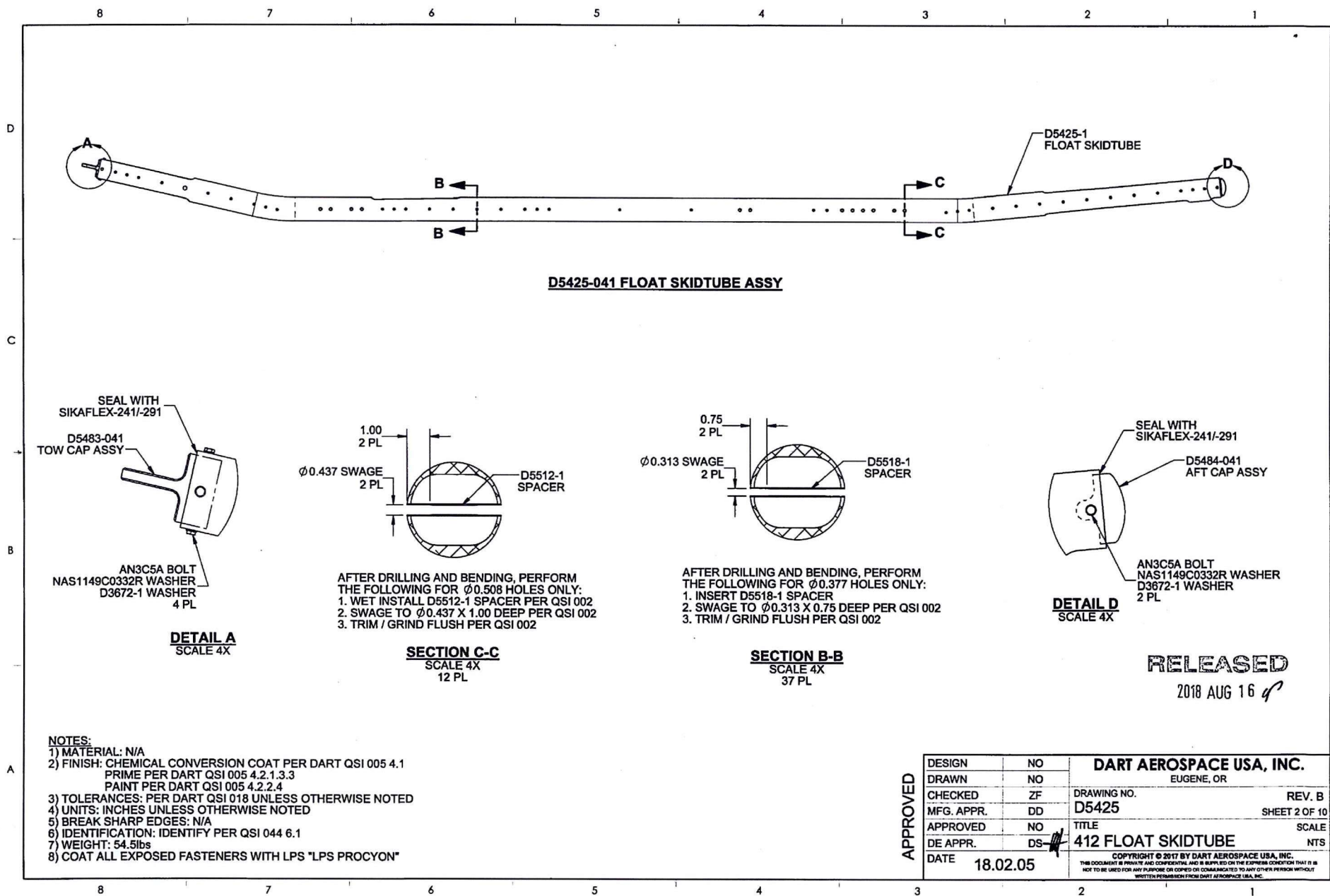
D5425-041 FLOAT SKIDTUBE ASSY

RELEASED

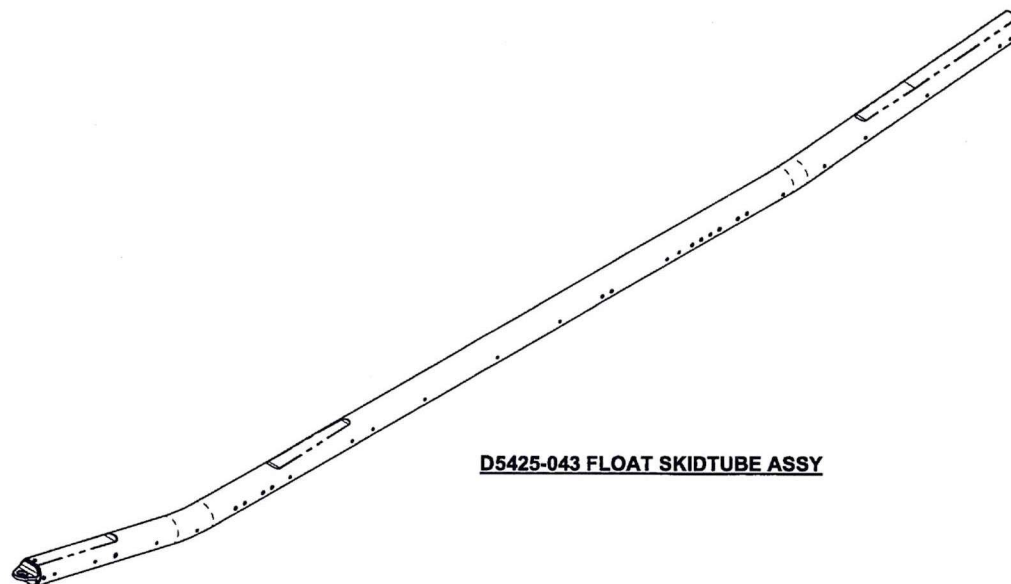
2018 AUG 16
ECN 18-736

B	CHANGE HOLE SIZE TO IMPROVE OFF-AXIS SWAGING IN SHEETS 5 AND 6 (NCR18-6741). PICTORIAL UPDATE DUE TO CHANGES IN D5483-1.	NO	18.02.05
A	NEW ISSUE	NO	17.07.19
REV.	DESCRIPTION	BY	DATE
DESIGN	NO	DART AEROSPACE USA, INC.	
DRAWN	NO	EUGENE, OR	
CHECKED	ZF	DRAWING NO.	REV. B
MFG. APPR.	DD	D5425	SHEET 1 OF 10
APPROVED	NO	TITLE	SCALE
DE APPR.	DS	412 FLOAT SKIDTUBE	NTS
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APPROVED



QTY -043	P/N	DESCRIPTION
X	D5425-043	FLOAT SKIDTUBE ASSY
6	D3672-1	WASHER
1	D5425-3	FLOAT SKIDTUBE (DART TRIBAG)
1	D5483-041	TOW CAP ASSY
1	D5484-041	AFT CAP ASSY
12	D5512-1	CROSSBOLT SPACER
18	D5518-1	CROSSBOLT SPACER
6	AN3C5A	BOLT
6	NAS1149C0332R	WASHER

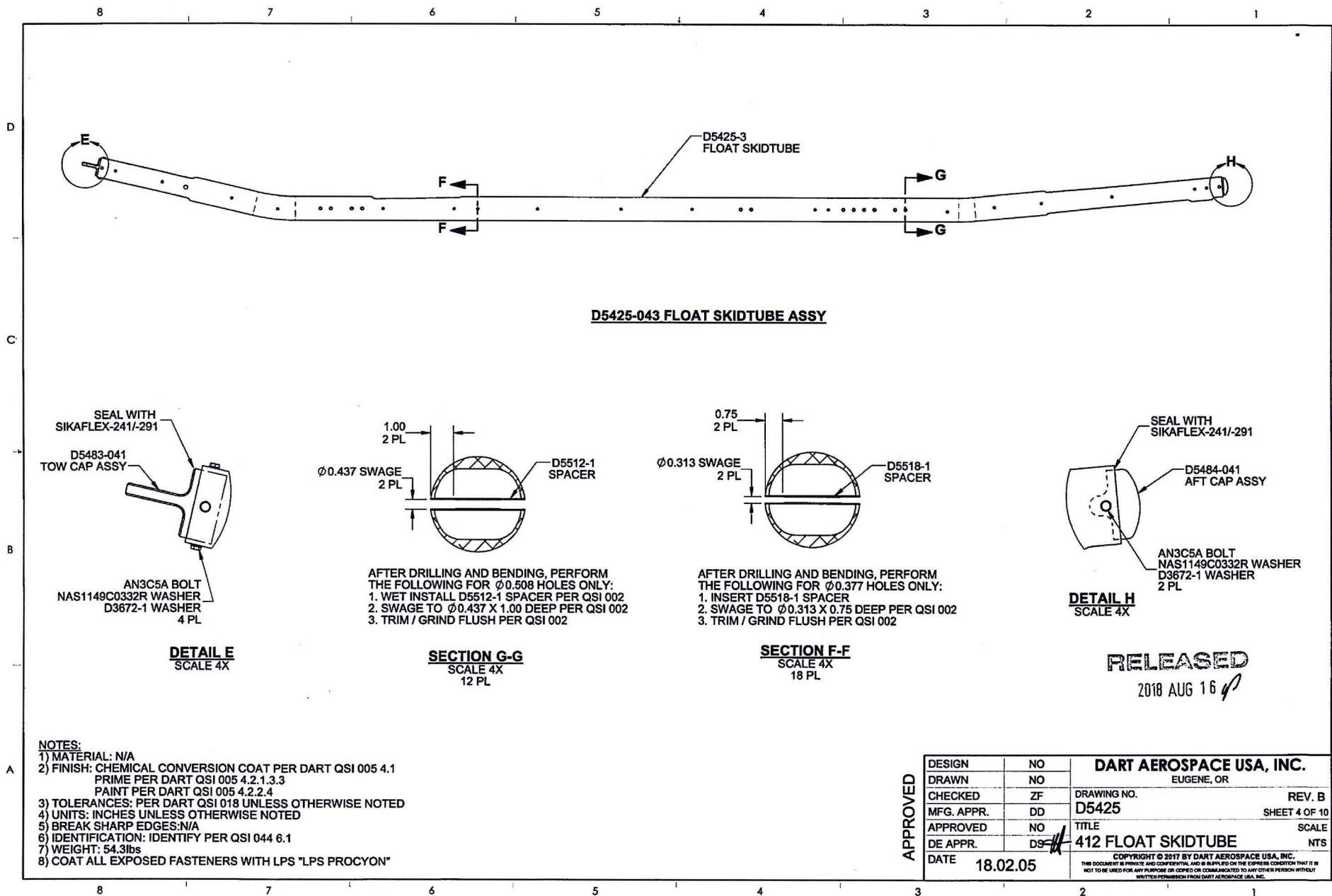


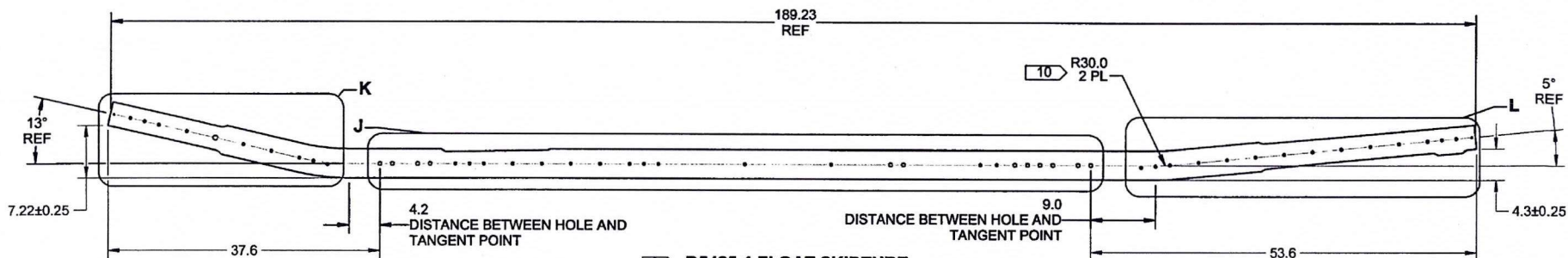
D5425-043 FLOAT SKIDTUBE ASSY

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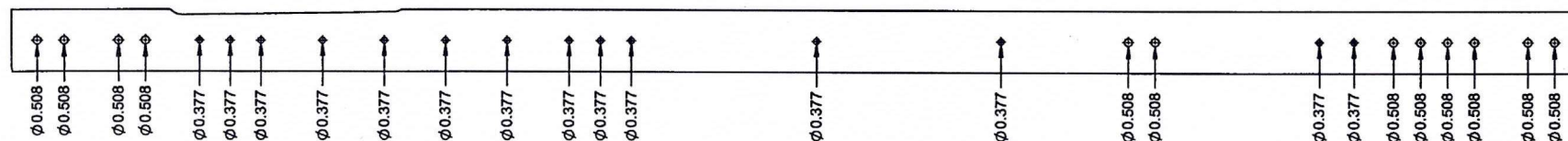
2018 AUG 16 *JP*

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	CHECKED	ZF	DRAWING NO.	REV. B
	MFG. APPR.	DD	D5425	SHEET 3 OF 10
	APPROVED	NO	TITLE	SCALE
	DE APPR.	DS	412 FLOAT SKIDTUBE	NTS
DATE		18.02.05	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

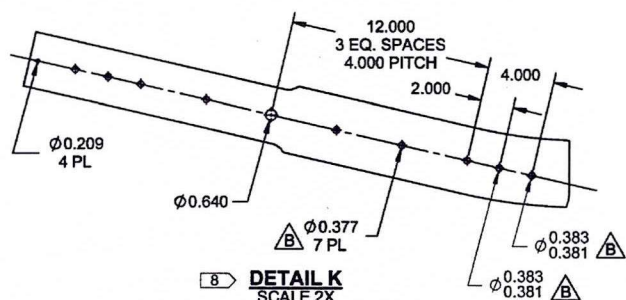




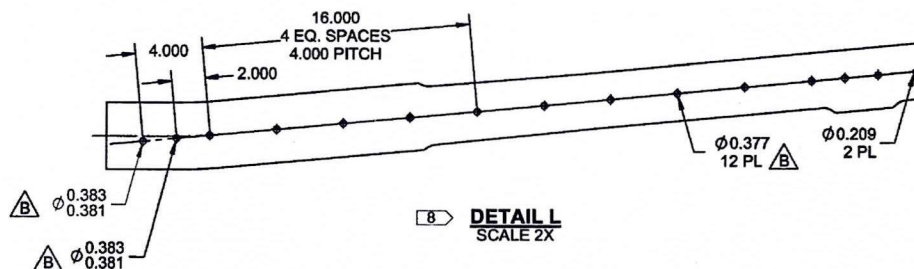
9 D5425-1 FLOAT SKIDTUBE



8 DETAIL J
SCALE 2X



8 DETAIL K
SCALE 2X



8 DETAIL L
SCALE 2X

NOTES:

- 1) MATERIAL: MAKE FROM D5425-1DRILL
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 52.57 lbs
- 8) ALL CENTERLINE HOLES THRU, BOTH SIDES AND ALIGNED WITHIN 0.010
- 9) MAXIMUM TWIST ALLOWANCE 3° BETWEEN FWD AND AFT BEND, 3° FROM EXTRUSION CENTERLINE AT ANY POINT
- 10) MAXIMUM 5% CRUSHING PER QSI 038 7.1

RELEASED

2018 AUG 16

APPROVED

DESIGN	NO
DRAWN	NO
CHECKED	ZF
MFG. APPR.	DD
APPROVED	NO
DE APPR.	DS
DATE	18.02.05

DART AEROSPACE USA, INC.

EUGENE, OR

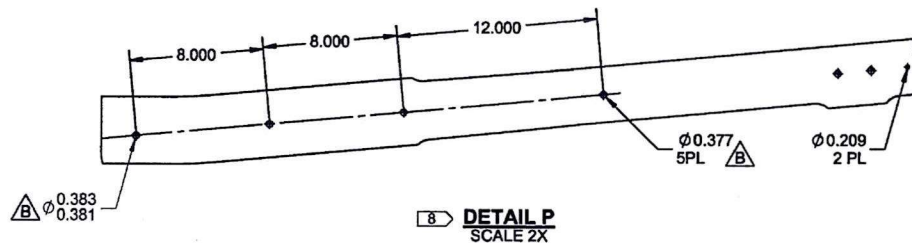
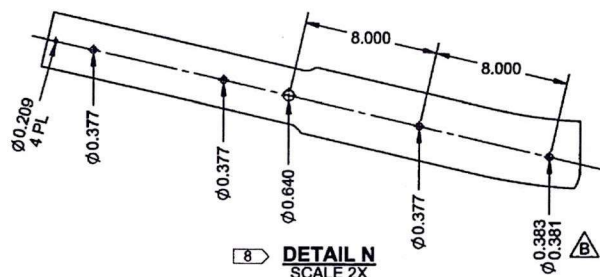
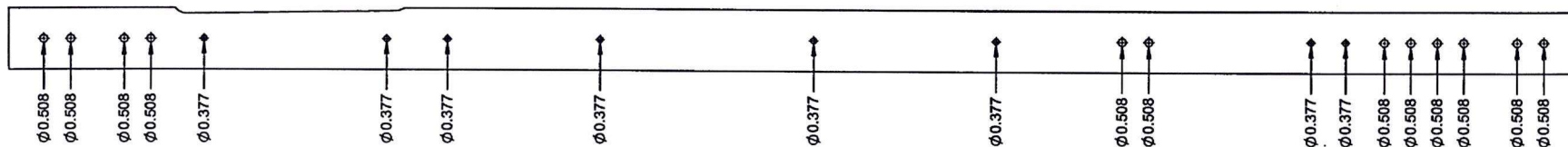
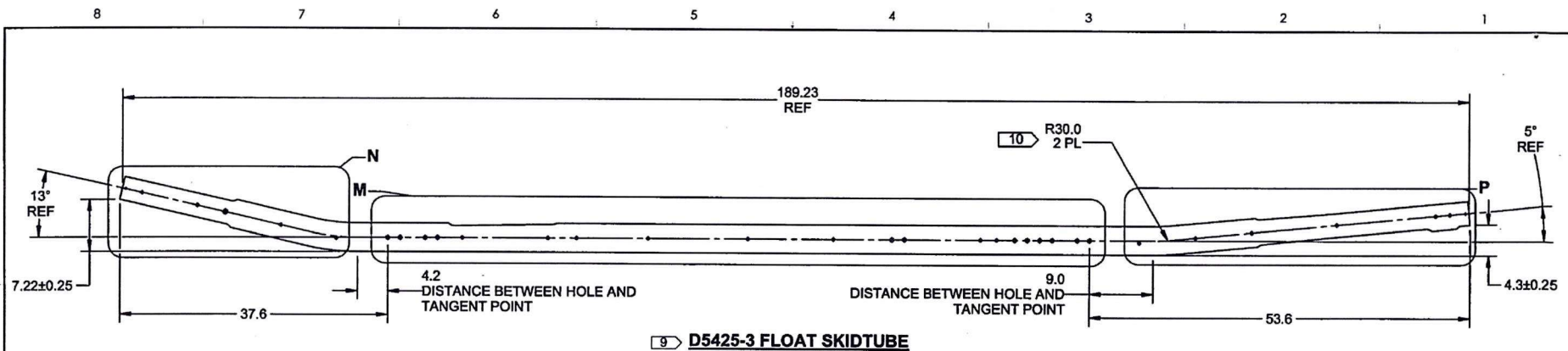
DRAWING NO.
D5425

REV. B
SHEET 5 OF 10

TITLE
412 FLOAT SKIDTUBE

SCALE
NTS

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NOTES:

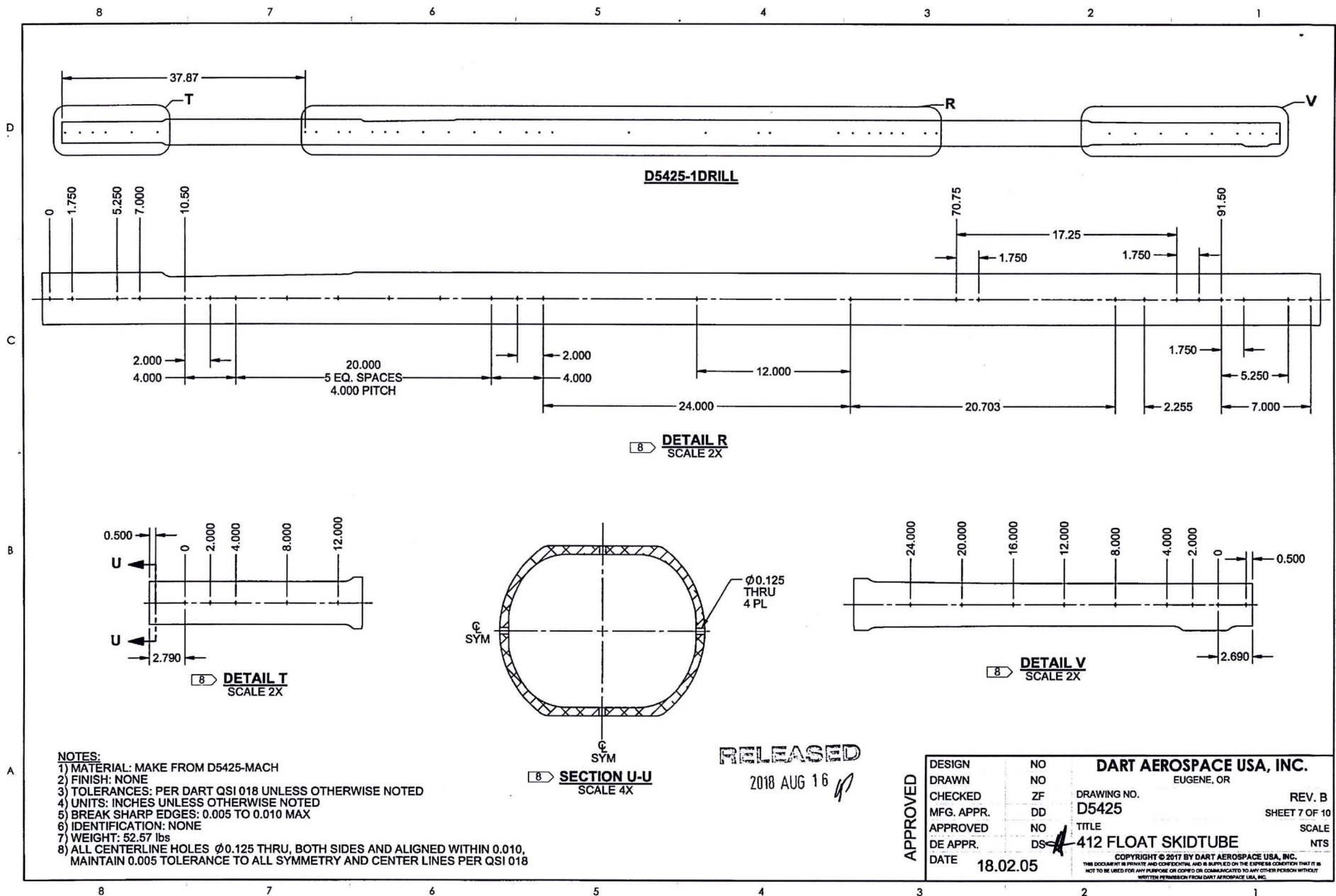
- 1) MATERIAL: MAKE FROM D5425-3DRILL
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 52.57 lbs
- 8) ALL HOLES THRU, BOTH SIDES AND ALIGNED WITHIN 0.010
- 9) MAXIMUM TWIST ALLOWANCE 3° BETWEEN FWD AND AFT BEND, 3° FROM EXTRUSION CENTERLINE AT ANY POINT
- 10) MAXIMUM 5% CRUSHING PER QSI 038 7.1

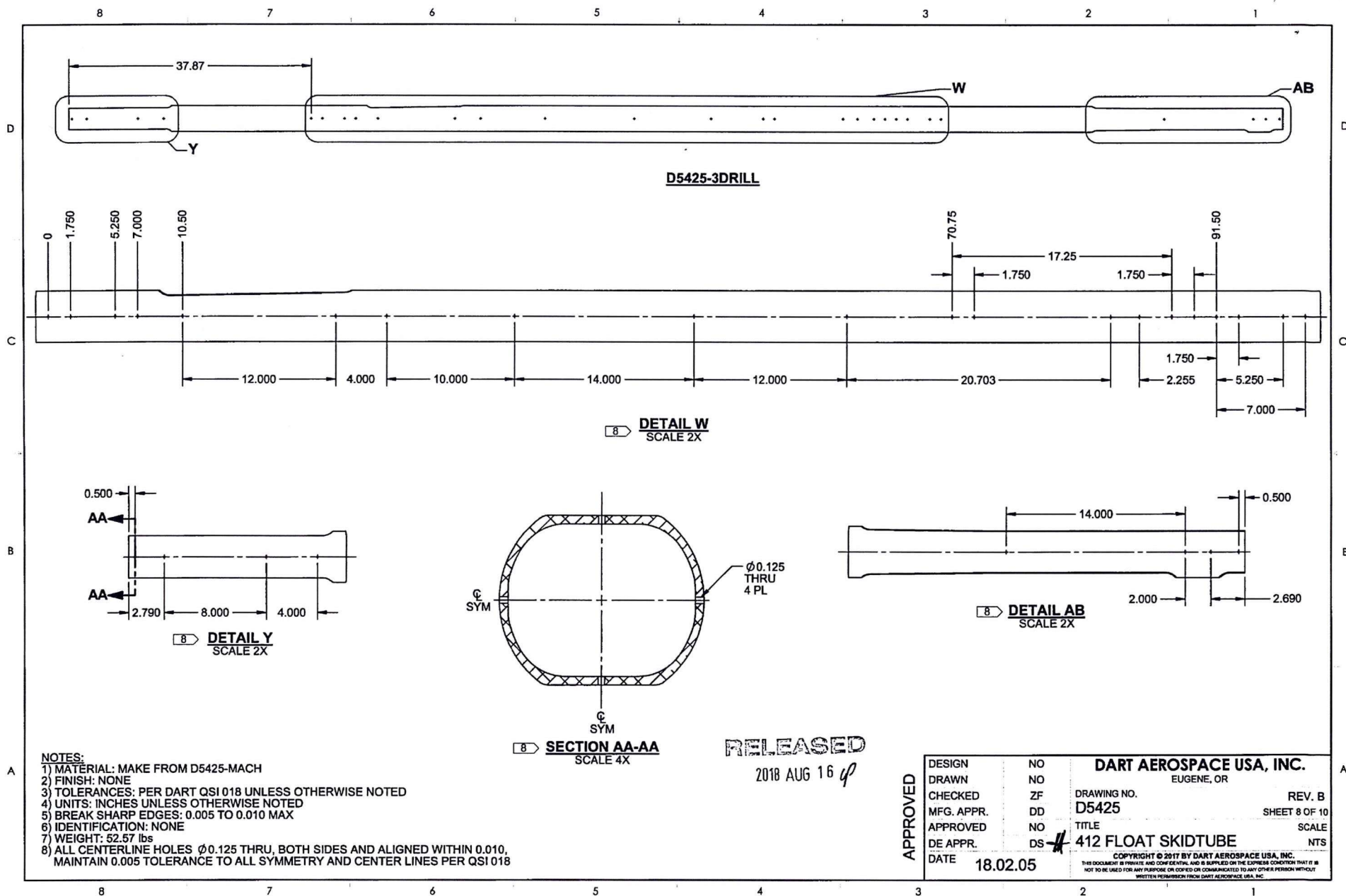
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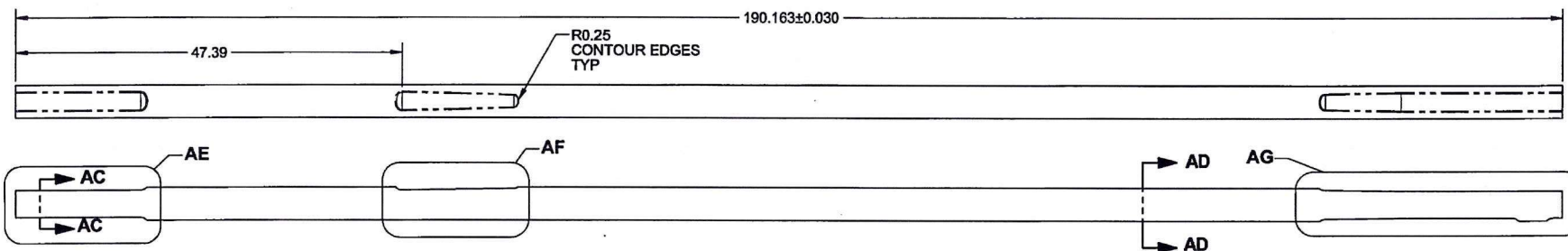
2018 AUG 16

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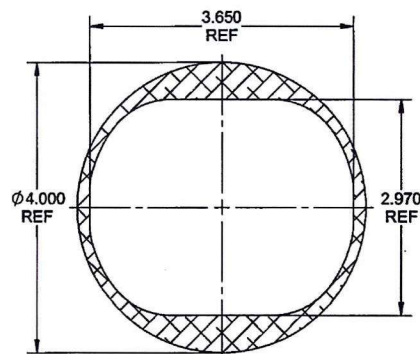
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CHECKED	ZF	DRAWING NO.	REV. B
MFG. APPR.	DD	D5425	SHEET 6 OF 10
APPROVED	NO	TITLE	SCALE
DE APPR.	DS	412 FLOAT SKIDTUBE	NTS
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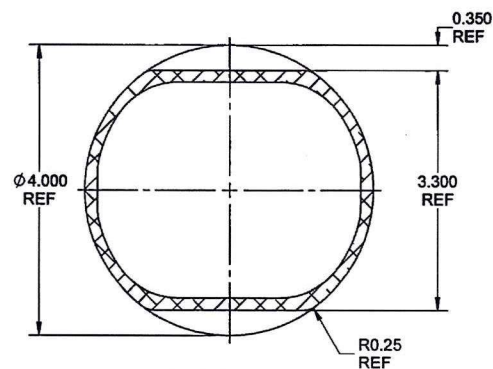




D5425-MACH
MACHINED TUBE



SECTION AD-AD
SCALE 8X



SECTION AC-AC
SCALE 8X

RELEASED
2018 AUG 16

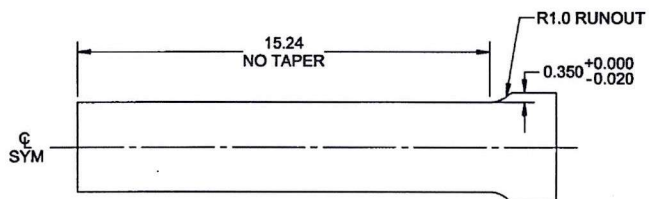
NOTES:

- 1) MATERIAL: MAKE FROM D6028-195 EXTRUSION
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 52.57 lbs
- 8) NO SHARP CORNERS. MIN RADIUS 0.125"

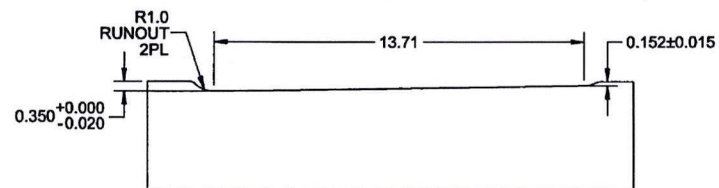
APPROVED

DESIGN	NO	DART AEROSPACE USA, INC.	
DRAWN	NO	EUGENE, OR	
CHECKED	ZF	DRAWING NO.	REV. B
MFG. APPR.	DD	D5425	SHEET 9 OF 10
APPROVED	NO	TITLE	SCALE
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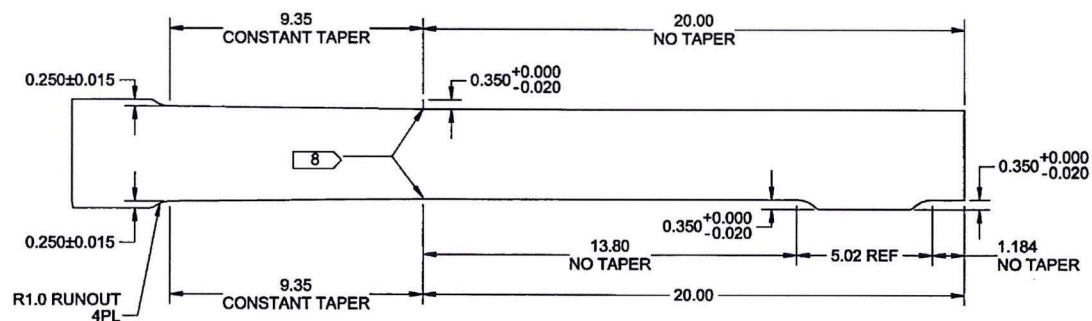
8 7 6 5 4 3 2 1



DETAIL AE
SCALE 3X



DETAIL AF
SCALE 3X



DETAIL AG
SCALE 3X

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2018 AUG 16 *4P*

APPROVED	DESIGN	NO	DART AEROSPACE USA, INC.	
	DRAWN	NO	EUGENE, OR	
	CHECKED	ZF	DRAWING NO.	REV. B
	MFG. APPR.	DD	D5425	SHEET 10 OF 10
	APPROVED	NO	TITLE	SCALE
	DE APPR.	DS	412 FLOAT SKIDTUBE	NTS
	DATE	18.02.05	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

8 7 6 5 4 3 2 1



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO042483



Supplier: ATE003-VC
Atelier Debosselage
358 Principale
Calumet
QC
J0V 1B0 Canada
Phone: 819 242 5633

PO No: PO042483
PO Date: 2/1/19
Due Date: 2/5/19
**Purchase Order
Revision:**
Revision Date:
Ship-To Contact: Tsimiklis, ChrisoulaPhone:

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	188017	D5425-043	Float Skidtube Assembly : Various STC's ***PLUG ALL CROSSBOLT SPACER HOLES PRIOR TO PRIME AND PAINT*** 1-PRIME AS PER DWG AND QSI005 4.2.1.3.3 PRIMER BATCH: _____ 2- PAINT AS PER DWG AND QSI005 4.2.2.4 PAINT BATCH: _____	Firmed	-	2/5/19	1 pcs	0 pcs	1 pcs	\$300.00/pcs	\$300.00
	188011		1 X FEB 05 2019	Firmed	-	2/5/19	1 pcs	0 pcs	1 pcs	\$300.00/pcs	\$300.00
	188013		1 X FEB 05 2019	Firmed	-	2/5/19	1 pcs	0 pcs	1 pcs	\$300.00/pcs	\$300.00
	170127		1 X FEB 05 2019	Firmed	-	2/5/19	1 pcs	0 pcs	1 pcs	\$300.00/pcs	\$300.00
Sub Total:							4	0	4		\$1,200.00

Grand Total: \$1,200.00



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO042483



Order Notes

Procurement Quality Clauses

A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 2/4/19 11:14 AM dart.tsimiklis.chrisoula